

Remarks/Arguments:

Introduction

Claims 1, 5-12 and 14-22 are pending. Claims 12 and 14-22 are withdrawn. Claims 2-4 and 13 have been canceled. Claim 1 has been amended to effectively include the limitations of originally filed claims 2 and 4. Claim 1 as amended now recites, *inter alia*, a passageway that terminates in a cross member having an end wall and an outlet aperture of fixed cross section. Claim 1 as amended also recites, *inter alia*, that the cross member defines at least two deflectors which converge towards the aperture to deflect the fluid towards the aperture to produce a flat spray pattern. Claim 1 as amended goes on to recite, *inter alia*, the provision of at least one axially displaceable pin adapted to move across the aperture to decrease or increase the cross sectional area of the aperture.

Claims 5-10 have been amended for antecedent basis following the amendments to claim 1.

Claim 12 has been rewritten into independent form and amended to include the limitations of amended claim 1.

No new matter is introduced with these amendments.

Objections to the Drawings / Specification

Claim 3 has been deleted. It is respectfully submitted that with the cancellation of claim 3 the concerns over the drawings and the specification raised by the examiner are obviated.

Reconsideration and withdrawal of the objections to the drawings and to the specification are respectfully requested.

Section 112 Rejections

Claims 1-11 were rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite. Applicant respectfully submits that with the amendments presented herein, the Section 112 rejections are obviated.

Reconsideration and withdrawal of the Section 112 rejections are respectfully requested.

Section 102 Rejections

Claims 1, 5-7, 10 and 11 are rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by US 816,470 to Higgins (hereinafter "Higgins"). Applicant respectfully traverses.

The Examiner appears to be confusing the deflectors with the pin(s). The deflectors 3, 4 of the nozzle of the subject application are not the pins. The deflectors 3, 4 of the nozzle of the subject application provide the flat spray pattern. The pins 21, 22 have the role of varying the volume of fluid which constitutes the flat spray pattern. Thus, if reference is made to Figures 6a, 6b or 6c, the two deflectors 3, 4 can be seen above the exit aperture 20. In Figure 7, the two deflectors 3, 4 would be above and below the pins 21, 22, and in Figure 8a the deflectors 3, 4 are between the ends of the pins 21, 22 above and below the aperture 20. It is the shape of the cross member and the deflectors formed by the cross member that cause the liquid to converge at the exit aperture causing the flat jet. Movement of the pin(s) varies the volume of exeunt fluid.

This concept is fundamentally different to the nozzle disclosed in Higgins. In Higgins, a mixture of steam and oil passes by axially displaceable plugs to reach an exit aperture 13 or 14. The plugs as stated between lines 80 and 85 cause the emitting spray to be flattened. It is thus clear that the spray is not always flattened and in fact we would

submit that the nozzle is not a nozzle for producing a flat spray patterns. Only one of the plugs has an inclined surface which deflects and converges the passage of the oil and steam. There is no disclosure of two converging deflectors of the kind in the claim of the subject application that provides, in the absence of the pins, the flat spray pattern.

The nozzle of the subject application operates on liquid, preferably water, to provide a flat spray pattern of water droplets. In contrast, the nozzle of Higgins relates to a mixture of fuel oil and steam which is compressible unlike the non-compressible liquid used in the subject application. The mixing chamber 8 in Higgins causes a turbulent mix of the steam and fuel oil unlike the subject application where a laminar flow of liquid is used to provide the flat spray pattern. The laminar flow of a non-compressible liquid is entirely different to the fluid dynamics of a compressible, turbulent steam and oil mixture.

Thus, it is respectfully submitted that Higgins fails to disclose each and every limitations as recited in amended independent claim 1. Therefore, reconsideration and withdrawal of the rejection of claims 1, 5-7, 10 and 11 under 35 U.S.C. § 102(b) are respectfully requested.

Section 103 Rejections

Claim 8 is rejected under 35 U.S.C. § 103(a) as allegedly being obvious over US 816,470 to Higgins (hereinafter "Higgins"). Applicant respectfully traverses.

As described above, Higgins fails to teach or suggest the limitations of the independent claim 1 of the subject application. Therefore, reconsideration and withdrawal of the rejection of claim 8 35 U.S.C. § 103(a) is respectfully requested.

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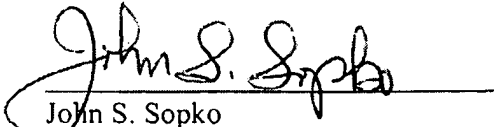
Summary

Therefore, Applicants respectfully submit that independent claim 1, and all claims dependent therefrom, are patentably distinct. Further, as claim 12 has been rewritten into independent form to include all the limitations of independent claim 1, rejoinder and allowance of claims 12 and 14-22 are respectfully requested. This application is believed to be in condition for allowance. Favorable action thereon is therefore respectfully solicited.

Should the Examiner have any questions or comments concerning the above, the Examiner is respectfully invited to contact the undersigned attorney at the telephone number given below.

The Commissioner is hereby authorized to charge payment of any additional fees associated with this communication, or credit any overpayment, to Deposit Account No. 08-2461. Such authorization includes authorization to charge fees for extensions of time, if any, under 37 C.F.R. § 1.17 and also should be treated as a constructive petition for an extension of time in this reply or any future reply pursuant to 37 C.F.R. § 1.136.

Respectfully submitted,


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